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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,049	12/21/2001	Brian A. Vaartstra	150.0118 0101	5131

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EXAMINER

LE, THAO X

ART UNIT	PAPER NUMBER
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2814

DATE MAILED: 03/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/032,049

Applicant(s)

VAARTSTRA, BRIAN A.

Examiner

Thao X Le

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action in Paper No 8 is persuasive and, therefore, the finality of that action is withdrawn.

However, the Applicant's amendment in Paper No. 6 filed on 10/03/02 necessitated the new ground(s) of rejection presented in this second final Office Action,

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-11, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,290,736 to Evans in view of US 6395194 to Russell et al.

Regarding to claims 1-3, Evans discloses a planarization method fig. 1 and 2 comprising: positioning a metal-containing surface of a substrate, block 100, to interface with a polishing surface, block 102, wherein the metal-containing surface comprises a metal selected from the group consisting of Group VIIIB second and third row metal, a group IB second and third row metal, and combination thereof, supplying a planarization composition in proximity to the interface and planarizing the substrate surface, wherein the planarization composition comprises a halogen-containing.

But Evans does not expressly disclose the planarization composition comprises halide salt are separately delivered.

However, Russell reference discloses the planarization method wherein the oxidizing agent comprises halide salt, column 5 line 26. At the time the invention was made; it would have been obvious to one of ordinary skill in the art to adding the halide salt teaching of Russell and Evans's CMP method, because such halide salt would have improved to remove the noble metal as taught by Russell, column 6 line 20-25.

Regarding to claims 4-5, 7 Evans discloses the metal-containing surface of the substrate comprises a metal selected from the group consisting of Rh, Pd, Pt, Pt, Ir, and Ru and elemental platinum, column 2 lines 64-66, and the substrate is a semiconductor substrate, column 5 line 28.

Regarding to claim 6, Evans discloses the metal is present in an amount of about 50 atomic percent or more, inherently discloses due to the electrode comprise noble metal, column 7 line 24.

Regarding to claim 8, 17 Evans discloses the polishing surface comprises a polishing pad and fixed abrasive article, fig. 2 block 102, and planarizing composition comprises a plurality of abrasive particle, column 2 line 43.

Regarding to claim 9, Evans discloses the continuous process, fig. 2. 'Carried out in one step' is be interpreted as a continuous process, i.e. loading the substrate, introducing the polishing agent, and begin planarizing.

Regarding to claim 10-11 Evans discloses the halogen-containing compound is selected from the group consisting of I₂, Cl₂, and Br₂, column 4 line 40.

3. Claims 12-16, 18-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,290,736 to Evans and US 6395194 to Russell et al and further in view of US 6346741 to Van Buskirk et al.

Regarding to claims 12-16, Evans does not expressly disclose the halide salt is an inorganic salt selected from the group consisting NaI, KBr, and organic salt is selected from the group consisting of Me_4NF .

However, Russell reference discloses the planarization method wherein halide salt is an inorganic salt selected from the group consisting NaI, KBr, and organic salt halide, column 5 line 26, column 6 lines 50-55. And Van Buskirk reference discloses the halide salt is KCl, column 8 lines 51-60. At the time the invention was made; it would have been obvious to one of ordinary skill in the art to adding the halide salt teaching of Russell and Evans's CMP method, because such halide salt would have improved to remove the noble metal as teach by Russell.

With respect to organic salt is selected from the group consisting of Me_4NF , Et_4NBr and Me_3NHCl , Russell discloses the halogen containing organic salt can be used, column 6 line 50-58. At the time of the invention was made; it would have been obvious to one of ordinary skill in the art to use the organic teaching of Russell with Evans, because such material substitution would have been considered a mere substitution of art-recognized equivalent values.

Regarding to claims 18-51, as discussed in claims 1-17, Evans, Russell and Van Brus Kirk discloses all the limitation as claimed, including the halogen-containing compound is present in

the planarization composition in an amount of about 1% to about 10% by weight, column 4 line 50-55.

4. Claims 52 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,290,736 to Evans in view of US 6346741 to Van Buskirk et al.

Regarding to claims 52, Evans discloses a planarization method fig. 1 and 2 comprising: positioning a metal-containing surface of a substrate, block 100, to interface with a polishing surface, block 102, wherein the metal-containing surface comprises a metal selected from the group consisting of Group VIIIB second and third row metal, a group IB second and third row metal, and combination thereof, supplying a planarization composition in proximity to the interface and planarizing the substrate surface, wherein the planarization composition comprises a halogen-containing.

But Evans does not expressly disclose the planarization composition comprises halide salt.

However, Van Buskirk reference discloses the planarization method wherein the oxidizing agent comprises halide salt wherein the halogen of the halide salt is different than the halogen of halogen-containing compound, column 8 line 55-60. At the time the invention was made; it would have been obvious to one of ordinary skill in the art to adding the halide salt teaching of Van Buskirk with Evans's CMP method, because such halide salt would have reacted with noble metal to form solid and/or ionic product having lower harness than noble metal as taught by Van Buskirk, column 8 line 59.

5. Claim 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,290,736 to Evans and US 6395194 to Russell et al and further in view of US 5976928 to Kirlin et al.

Regarding to claims 53, Evans discloses a planarization method fig. 1 and 2 comprising: positioning a metal-containing surface of a substrate, block 100, to interface with a polishing surface, block 102, wherein the metal-containing surface comprises a metal selected from the group consisting of Group VIIIB second and third row metal, a group IB second and third row metal, and combination thereof, supplying a planarization composition in proximity to the interface and planarizing the substrate surface, wherein the planarization composition comprises a halogen-containing.

But Evans does not expressly disclose the planarization composition comprises halide salt and composition is not basic.

However, Russell reference discloses the planarization method wherein the oxidizing agent comprises halide salt, column 5 line 26. At the time the invention was made; it would have been obvious to one of ordinary skill in the art to adding the halide salt teaching of Russell and Evans's CMP method, because such halide salt would have improved to remove the noble metal as teach by Russell.

With respect to not basic composition, Kirlin reference discloses both basic and acidic aqueous solutions can be used, column 5 line 5-20. At the time of the invention was made; it would have been obvious to one of ordinary skill in the art to replace the basic composition of Evan with acidic composition teaching of Kirlin, because such

material substitution would have been considered a mere substitution of art-recognized equivalent values.

Response to Arguments

6. Applicant's arguments with respect to claims 1-53 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's amendment in Paper No. 6 filed on 10/03/02 necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao X Le whose telephone number is 703-306-0208. The examiner can normally be reached on M-F from 8:00 AM - 4:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M Fahmy can be reached on 703-308-4918. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Thao X. Le
March 14, 2003



PHAT X. CAO
PRIMARY EXAMINER